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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,020	04/18/2001	Yasushi Kohno	TKA0028	7531

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EXAMINER

VALENTI, ANDREA M

ART UNIT	PAPER NUMBER
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3643

DATE MAILED: 08/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/837,020

Applicant(s)

KOHNO ET AL.

Examiner

Andrea M. Valenti

Art Unit

3643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 June 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \*   c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, second line states 'encapsulating one plant seed or a plurality of plant seeds in an aqueous gel capsule' but the next step of refrigerating fails to mention 'one plant seed'. It appears that it should state --refrigerating the one plant seed or the plant seeds--. This correction should also appear in claims 2, 5, and 6-13.

Claims 3-5 are rejected as being dependent from a rejected base claim.

(The examiner would like to bring applicant's attention to a typographical error in the appeal brief paper #17, claim 1, third line, 'of a plurality' should be --or a plurality--).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,701,700 to Kohno et al in view of *Population Viability Analysis for the Oyster Plant (Mertensia maritime) in the Oslofjord Region* by Skarpaas.

Regarding Claim 1, Kohno et al teaches a method of encapsulating one plant seed or a plurality of plant seeds in an aqueous gel capsule (Kohno Col. 1 line 10-20); refrigerating the plant seeds under the condition that the plant seeds do not germinate (Kohno Col. 4 line 39); and sowing the plant seeds (Kohno Col. 1 line 21-25 and Col. 3 line 27-36). Kohno does teach that the seeds are subjected to cold temperatures. Kohno et al does not explicitly state that the method prevents defective germination or growth of a plant. However, it is notoriously old and well-known in the art of plant husbandry that cold breaks seed dormancy and provides for a more uniform and enhanced germination. Skarpaas reference is cited merely to illustrate accepted wisdom in the field. The Skarpaas reference is cited solely to teach that a cold period is necessary to break seed dormancy and that prolonged cold treatment enhances germination (Skarpaas abstract second sentence of second paragraph). Therefore, it would have been obvious to one of ordinary skill in the art to modify the storage duration under cold temperatures through routine tests and experimentation to a length that enhances germination as taught by Skarpaas.

Regarding Claim 13, Kohno as modified inherently teaches refrigerating the encapsulated plant seed at a temperature of about 15°C or lower (Col. 3 lines 28-36) and for a sufficient period of time to improve the germination of the encapsulated plant seed as compared to non-refrigerated encapsulated plant seeds.

Regarding Claim 2, Kohno as modified does not explicitly identify the plant seed size. However, it would have been obvious to one of ordinary skill in the art to apply the teachings of Kohno to a seed equal to or less than 1 mm for the enhanced germination

Art Unit: 3643

effects taught by Kohno et al since applicant provides no criticality in the specification for the size and it is old and notoriously well-known to coat tobacco seeds with a seed coat.

Regarding Claims 3 and 4, Kohno et al as modified is silent on the refrigeration being carried out in a dark place. However, it is old and well-known in the art of plant husbandry that seeds possess germination and dormancy characteristics dependent on their genetic nature and germination occurs under specific environmental conditions such as light requirements. Some seeds require light and some seeds require darkness to germinate. It would have been obvious to one of ordinary skill in the art to conduct the seed storage method of Kohno et al in a dark place since a radish seed is a light germinator and it is necessary to store the seed in a dark place to prevent early germination and to increase the success rate of the plant.

Regarding Claims 5 and 6, Kohno et al as modified teaches the plant seed is a seed of a light germinator (Kohno et al Col. 4 line 25).

Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,701,700 to Kohno et al as applied to claim 1 above, and further in view of U.S. Patent No. 5,525,131 to Asano.

Regarding Claims 7-12, Kohno et al as modified is silent that the plant seed encapsulated in an aqueous gel capsule is a pelletized seed. However, Asano teaches that it is old and well-known in the art of plant husbandry to pelletize a seed (Asano Col. 1 line 15-21). It would have been obvious to one of ordinary skill in the art to apply the

Art Unit: 3643

gel coating of Kohno et al to the palletized seed of Asano for the mechanized and economical distribution of the seeds in the field (Asano Col. 1 lines 14-18).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Examiner maintains that a prima facie case of obviousness was established and that the teachings of the cited references are combinable.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

The teachings presented by Kohno are applicable to many different seeds. The abstract, the specification, and the claims of Kohno all refer to seeds in a general sense. The radish seed is merely just one example of a seed that could receive the aqueous gel-coat. The teachings of Skarpass were included to illustrate accepted wisdom in the field that it is old and notoriously well-known in the art of plant husbandry that temperature has a direct effect on germination. Skarpass presents general knowledge in the field of seeds. The seed of Skarpass and the seeds of Kohno are merely

Art Unit: 3643

alternate equivalent seeds. Although the seeds are alternate equivalents Skarpass was not a cited reference with regard to seed types but merely to illustrate the effect of temperature on seeds in general.

Skarpass teaches in the last paragraph of the abstract that seeds tend to germinate in warmer temperatures and it is a common characteristic of seeds not to germinate when subjected to cold temperatures. Skarpass also teaches that cold temperatures break seed dormancy to increase the probability of success.

Furthermore, Kohno teaches the same method steps as those outlined by applicant and will then inherently attain the same results since the method was conducted under the same conditions even though Kohno set out to solve a different problem. An objective of Kohno is to prevent the reduction in yield and handling (Kohno Col. 1 line 55). Thus storage seed dormancy and germination are inherent concerns of Kohno thus providing the motivation and suggestion for the combination.

Examiner would like to bring applicant's attention to additional cited references that teach it is notoriously old and well-known in the art that cold breaks seed dormancy:

U.S. Patent No. 6,331,504 B1 teaches that germination is temperature and seed specific (Col. 1 lines 17-55);

Abstract [<http://www.oikos.ekol.lu.se/Oikos.95.3.abstracts/11173skarpaas.htm>] by Skarpaas, third sentence prolonged cold treatment enhanced germination;

Effect of Scarification, GA and chilling on the germination of goldenrain-tree (*Koeleruteria paniculata* Laxm.) seeds, Rehman, Kyungpook National University, South Africa, 16 December 1999, 6 pages, abstract third sentence;

The Angelgrove Tree Seed Company, Basic Guidelines & Tips for Germinating Seeds, 9 pages [<http://trees-seeds.com/seed.html>] page 2 first paragraph.

Examiner disagrees with applicant's argument that the pelletized seed would dissolve during preservation. Kohno teaches that the encapsulated seed is stored in a solution of metal ions (Kohno Col. 2 line 19-39 and abstract). The metal ion, also taught by Asano (Asano Col. 1 line 35-45), is a water proofing compound that would prevent the pelletized seed from dissolving prematurely in the preservation solution.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

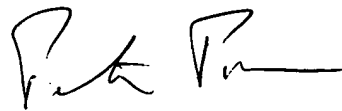
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrea M. Valenti whose telephone number is 703-305-3010. The examiner can normally be reached on 7:30am-5pm M-F; Alternating Fridays Off.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter M. Poon can be reached on 703-308-2574. The fax phone numbers for the organization where this application or proceeding is assigned are 703-306-4195 for regular communications and 703-305-0285 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-4357.

AMV  
August 13, 2003

A handwritten signature in black ink, appearing to read "Peter Poon", is written over a faint, rectangular official stamp. The signature is fluid and cursive.

Stamp: AUG 13 2003  
FEDERAL BUREAU OF INVESTIGATION  
U.S. DEPARTMENT OF JUSTICE